SCIENCE & GOVERNMENT REPORT

The Independent Bulletin of Science Policy

Volume III, No. 19 | P.O. Box 21123, Washington, D.C. 20009 | Nov. 1, 1973

Hostile Senate Clobbers Education Research

The research grants program of the National Institute of Education—which was to receive up to 15 percent of the fledgling agency's budget under plans announced less than three months ago—will be virtually wiped out by a drastic budget cut imposed by angry senators.

That's the pessimistic prediction from Thomas K. Glennan, Jr., the institute's director, in the wake of one of the most stunning budget reversals to hit a major research agency in recent years.

The budget trauma was remarkable not only for the magnitude of the cut imposed (more than $87 million is almost certain to be lopped off the administration's budget request of $162.2 million, leaving NIE with only $75 million) but also for the acrimony engendered by the appropriations debate.

Some hint of the ill feeling surfaced during appropriations hearings on the House side last March when Rep. Edith Green (D-Oregon), long influential in education affairs and long a skeptic about research, practically accused the NIE of incompetence and corruption, largely by suggesting it would be no better than the lacklustre Office of Education programs it replaced. As she rather indelicately phrased it: "I have been lied to—and I use those words very advisedly—I have been lied to so many times by the people in the Office of Education . . . We see collusion, corruption, shoddy work, inefficiency, waste throughout the whole operation. It gives me grave doubts about NIE. I am just not persuaded that NIE is going to be any different."

But the hostility became even greater on the Senate side, where staff members complained about arrogance, ignorance and unresponsiveness on the part of NIE's politically naive leadership. The Senate anger culminated in an unusually vituperative

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Two Academies Back Off from Split

The National Academy of Engineering is seeking a reconciliation with the National Academy of Sciences after a brief period of estrangement.

Last March the NAE's governing Council, fed up with its subordinate role within the larger and more influential NAS, recommended that the engineers seek separate incorporation. (SGR, Vol. III, No. 7). But, since then the NAE, under its new president, former Air Force Secretary Robert C. Seamans, Jr., has been quietly moving back into the NAS embrace. The NAE has been given interim representation on the governing board which directs NAS advisory activities and it has tentatively agreed to merge its own advisory committees into the NAS apparatus. At the NAE's fall business meeting on Oct. 24, the members urged their leaders to "continue these efforts" at cooperative activity.

The difficulties of independent living, coupled with a less jealous attitude on the part of the new NAE leadership, have apparently given the NAE second thoughts about the wisdom of divorce.

In Brief

The West German government has allocated about $1.5 million for research on the "jet nozzle" method of uranium enrichment, a cutrate technique that avoids the great costs of gaseous diffusion and the complexities of the centrifuge method. Formerly considered a mere laboratory curiosity, the jet nozzle technique is believed to be what uranium-laden South Africa was boasting of three years ago when it coyly claimed development of a cheap enrichment system. If it works, the cost barrier will be sharply lowered for entry into the nuclear club.

President Nixon is apparently still awed by the language used to describe matters scientific. Back in May 1971, in awarding the National Medals of Science, he commented about the citations: "I have read them, and I want you to know that I do not understand them, but I want you to know, too, that because I do not understand them, I realize how enormously important their contributions are to this nation." Last month, in awarding another batch of the same medals, he expressed pleasure that the President once more had "an opportunity to say a word about a subject that he claims no particular expertise in, and for that reason, has great admiration for those who are truly expert as these various citations will indicate." Later, he asked H. Guyford Stever, his science advisor, to read the citations aloud "and please translate them into English, if you will."

Complaints of thefts of industrial R&D data have become so plentiful among European firms that the Council of Europe will soon consider a draft of a model law aimed at standardizing the rules. The draft has been prepared by representatives of France, Great Britain and Interpol.

Nixon's Boost in Energy R&D is Overstated

There's less than might appear in President Nixon's recent announcement that he would boost funding of energy R&D by $115 million in the current fiscal year, thus driving total spending for such purposes up above $1 billion.

To begin with, that $1 billion figure was arrived at only with the help of some judicious redefining of what constitutes energy R&D. When the administration first submitted its proposed budget for fiscal 1974, the current year, it said it was seeking $772 million for energy R&D. But it has since concluded that several research activities not counted in that total, such as automotive research, energy conservation and environmental effects, should be classified as energy projects. By that reckoning, the administration's original budget is now said to have proposed $887 million for energy R&D.

It is this total to which additions are now to be made. Last June, the President announced that he would add $100 million to energy research. He subsequently asked Dr. Dixy Lee Ray, chairman of the Atomic Energy Commission, to head a study of how to allocate the $100 million. After her report had been reviewed by the White House Energy Office and OMB, the President concluded that $100 million was not enough. The problems could not be solved unless he added another $15 million to the kitty—just enough to drive the total funding over the politically attractive $1 billion mark.

Almost half of the increased funding—about $50 million in all—will be allocated to coal research. Technologies to control sulfur oxide emissions will get $12 million of the increase. Other boosts, ranging between $5 and $7 million, will go for geothermal research, advanced energy conversion systems, energy conservation, gas cooled nuclear reactors, new automobile engines, nuclear fusion, electric transmission and distribution, and the environmental effects of fossil fuels.

But even the $115 million increase is less than it seems. Congress has already appropriated substantially more money for energy R&D than the President's original budget requested. Thus the Administration will really only be adding perhaps $50-60 million to the funds already available. A supplemental appropriation request for the precise sum is to be submitted to Congress shortly.

NIE BUDGET *(Continued from page 1.)*

floor speech on October 4 by Sen. Warren G. Magnuson (D-Wash.), chairman of the subcommittee that handles education appropriations. In explaining why it was desirable to cut NIE's budget request in half, he said: "There is nothing wrong with cutting the bill 50 percent if they are not doing anything." Magnuson characterized the 37-year-old Glennan, an alumnus of the Office of Economic Opportunity and the Rand Corp., as "probably the most miserable witness I have ever seen in my career in Congress . . . He did not know what they were doing. He had no idea what they are going to do . . . I never saw anything like this outfit."

All of which means that the NIE, which was established last year in an effort to upgrade the quality of educational research, is now staggering under a political, financial and psychological setback of unexpected proportions. Whether the episode will leave lasting scars is not clear. Institute officials talk bravely of the "learning experience" they have just gone through. Glennan told SGR the situation is "grim" but "not, in my judgment, a disaster."

The institute was proposed by President Nixon in his 1970 education message, largely at the urging of Daniel P. Moynihan, the Harvard social scientist who was then serving as Nixon's wise man on domestic issues. Its chief congressional champion was Rep. John Brademas (D-Ind.), chairman of the House Select Subcommittee on Education. Much of the original rhetoric surrounding the creation of NIE focused on the need to enhance equality of educational opportunity, but the new agency seems to have been established primarily because the research programs previously supported by the Office of Education had gained a reputation for mediocrity, irrelevance, and mutual backscratching among experts at grantsmanship. The new agency is to strengthen not only educational R&D but also the dissemination of research findings, and it is to deal with all levels of education, from birth to death.

Unfortunately, the institute has had difficulties getting started. It officially came into being on August 1, 1972. But Glennan was not sworn in as the first permanent director until November 1. And the institute's policy-making board, the National Council on Educational Research, was not confirmed until June 7, 1973, which meant that NIE operated for the better part of a year without the board which is supposed to determine the policies it will follow. Part of the reason for the delay was that Moynihan, who was slated to become the first chairman, opted instead to accept an ambassadorial appointment to India, and it took considerable time to sign up a suitable successor—Patrick E. Haggerty, board chairman of Texas Instruments, Inc., the Dallas-based electronics firm. As a result, Glennan was harassed for much of his first year by critics who contended, on the one hand, that he should do nothing without the guidance of the not-yet-appointed Council, and on the other, that he should get the institute moving faster. "Nobody has put the blame where it really belongs—on the White House, which delayed appointing the Council," Brademas told a reporter. "That's what put Glennan between the rock and the hard place."

The institute operated its first year on a budget of $110 million, most of which supported programs transferred from the Office of Education and other agencies. Virtually the only significant new activity

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Overblown Claims for the Virtues of Chemistry

The American Chemical Society released last week a 600-page report on *Chemistry and the Economy* which it described as a "pioneering attempt by a major scientific discipline to summarize what it has accomplished . . . and to measure its influence on the nation's economy."

ACS officials stressed that the report was "intended to be a factual and objective report on the place of chemistry in our society and in no way a self-serving document for the benefit of chemistry and its people."

But the report was based on inputs from some 400 scientists who were primarily drawn from industry, which is to say that the "objective" viewpoints presented are the viewpoints of the industrial chemist and chemical engineer.

That this tends to produce a certain distortion can be readily seen in some of the chapters describing the accomplishments of chemistry. A review of the chemical achievements of General Motors Research Laboratories, based entirely on information supplied by GM, finds that "the GM research program has, over the years, recognized the automobile as much more than an engine; and, in contemplating the engine, it has reacted to the continual need expressed by consumers for better parts, superior fuels, and less noxious exhausts." The average reader can be pardoned for failing to recognize any resemblance between that rosy evaluation and recent widespread criticism that the automobile is a defect-prone, gas-guzzling, smog-belching dinosaur.

Similarly, a chapter on pesticides contains a section on benefits and risks which stresses the "broad benefits" that man has derived from chemicals while downplaying environmental hazards as "not nearly so clear-cut nor so well understood as might seem to be the case." And a chapter on nuclear energy, based primarily on inputs from the AEC, discusses radioactive waste management without mentioning the AEC's leakage problems. Nor is there any hint that the emergency core cooling systems for nuclear reactors have come under fire as a safety hazard. The chapter contents itself with noting in a single sentence that "chemical systems have been developed for emergency shutdown and cooling in case of accident."

The report is the culmination of three years of work by a massive study team headed by Milton Harris, former vice president for research at Gillette, and Max Tishler, former senior vice president at Merck, who is now a professor at Wesleyan. It was financed by about $150,000 in ACS funds and a $99,100 NSF grant.

The report was made public at ostentatious ceremonies in the hearing room of the House Science and Astronautics Committee. Just why a self-glorifying document prepared by a private group of industrial scientists should be released in that setting was not made clear, but presumably the ACS hopes that Congress will heed the report's advice. Among the 14 recommendations is one which suggests that some form of technological injury insurance (presumably government-backed, though the report is not explicit) be devised to compensate companies if innovations that pass early screening tests are later found to be unsafe or environmentally damaging. The report prefers this insurance approach to formal programs of technological assessment, such as those endorsed by Congress, which are "bound to hamper the introduction and use of new processes and products."

The most valuable contribution of the report, in the opinion of many expert observers, is its review of the contributions of chemistry in 20 of the nation's largest industries, including some that are not traditionally considered part of the chemical industry. These reviews are expected to be particularly useful for students and practicing chemists who seek an understanding of their field. (The report is available at $6.50 from the ACS, 1155 16th St., N.W., Washington, D.C. 20036.)

But readers are warned that the report looks at chemistry through success-tinted glasses. Harris, in describing his own feelings about the upbeat findings, said he felt like the fellow who confessed to a rape he didn't commit because "the evidence was so flattering I just had to plead guilty."—PMB

Nixon Hints at Budget Boosts

Nixon watchers are drawing comfort from some kind words the President uttered about science budgets when he awarded the National Medals of Science at the White House on Oct. 10.

"Let me simply conclude by pointing up something that I know concerns many of the scientific community and that is why is it that the budget for science is not moving up at the levels that many of you think is essential if the United States is to maintain a position of leadership in this area.

"Well, the budget is a problem in many areas. I can only say, however, that in the field of basic research, when it comes to problems of energy, when it comes to problems of the environment, the other areas that I have mentioned, we must allocate a larger proportion of our national income to these areas, and by doing so we not only will make a contribution toward the scientific community and developing the scientific capabilities of our people, but we will also make a very great contribution to a better nation here at home."

Noting that scientific research had made major contributions to defense and to the space program, contributions which earned it substantial federal support, the President added:

"But now, as we turn from war to the works of peace, we must not cut back on that research. What we must do is to channel the efforts in the field of research to peaceful uses, the field of energy, ecology . . . and not, of course, . . . in any way downgrade the efforts we should make in the field of health, education and the others."

Science Policy: Last Gasp from a Declining Set

Science and the Evolution of Public Policy
Rockefeller University Press
(288 pages, $11)

Following publication several months ago, this super-subsidized product of the conference circuit justifiably disappeared virtually without notice. This is unfortunate, for most of the 12 individual contributions* here constitute an intellectual rubbish heap of professional self-pity and piously draped vested interest that helps explain the diminishing scientific presence in national policymaking. The book warrants notice, if not as an unintended epitaph to the once-flourishing science and government relationship, then as a revelation of the political fantasy life of men prominent on the science side of the equation.

Derived from a "lecture-seminar series" with formidable institutional underpinnings—The Rockefeller University, the National Science Foundation, and The Commonwealth Fund—the volume is by and large an exercise in salesmanship by a *declasse* academic set puzzled by Washington's indifference to its claims for support. Interestingly, the most innovative and provocative thoughts are presented by a contributor drawn from industry, Patrick E. Haggerty, chairman of the board of Texas Instruments, who, in contrast to his colleagues' traditional pleas for further expansion of federal support for academic research, asks some heretical questions about the justification for this use of resources. Thus, Haggerty argues that "It has been pretty much doctrine that all that was necessary to solve the problems of the education industry was sufficient money. It would seem to me that the events of the past 20 years should have dispelled that illusion completely. After all, spending that is approaching three times as much per student (in constant dollars) does not seem to have improved the effectiveness of the system or the quality of the end product appreciably."

Haggerty also observes that "it is not clear that the overall accomplishments of academic science correspond to the enormous increase in support," adding, "Over and over again the advocates of science assume that the negative effects of inflation cannot be overcome by improved productivity and, hence, that the funds made available for academic science must be increased annually by an amount sufficient to overcome the inflation and to add to additional real growth. This is a common attitude in the entire sector of our society that can be described under the general category of services, and it is an extremely destructive one."

In making these observations, Haggerty may possibly have had in mind the views of a fellow contributor to the volume, Harvard's Harvey Brooks, who, in recent years, has emerged as the Bourbon ideologist of federal science policy affairs. Though situated in the heart of one of the richest and most productive scientific communities of a nation whose total scientific enterprise is the envy of the world, Brooks concludes that "Real support of federal R&D is (now) less than in 1963 and has thus declined about 24 percent from its peak in real purchasing power." This alleged decline, he concludes "has engendered bitterness, disillusionment and hostility toward government and the science 'establishment' " In fact, in Brooks' view the situation is so bad that the Great Depression of the 1930s can be looked back to as a happier time for the practitioners of science. In that period, he nimbly concludes, "Despite widespread unemployment among Ph.D.'s, young scientists were entering the system, and the nation's capability for doing science was growing. Even though there was much bemoaning the sad state of science . . . the system remained basically healthy, and the number of employed scientists and engineers continued to grow as a proportion of the professional and technical work force."

No reference is made to the fact that today young scientists are "entering the system" in numbers that would have been regarded as fantastic in the threadbare days of the '30s; nor is any justification

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*The contributors are: Ivan L. Bennett, Jr., NYU; Harvey Brooks, Harvard; Edward E. David, Jr., Gould, Inc.; Patrick E. Haggerty, Texas Instruments; Caryl P. Haskins, former president, Carnegie Institution of Washington; Harold Himsworth, former deputy chairman, British Medical Research Council; William D. McElroy, UC San Diego; Robert Morison, Cornell; James Murtaugh, Association of American Medical Colleges; Gerard Piel, *Scientific American*; Henry W. Riecken, University of Pennsylvania; Walter A. Rosenblith, MIT; James A. Shannon, Rockefeller University.

Ralph, They Need You in Mosow

Roadtesting of nine brand new Soviet-built Moskvich passenger cars has been abruptly cancelled by Britain's Consumers' Association following the discovery of numerous safety defects that caused the CA to conclude that the cars were unsafe even for its experienced test drivers.

The Moskvichs, vanguard of a Soviet effort to earn foreign exchange in western consumer markets, were found to have leaking brake fluid, oil leaks onto brake linings, loose steering parts, loose wheel nuts, and other defects. The director of the Association said, "We have found the potentially dangerous standard of construction of this car to be by far the gravest safety problem we have ever had with any car."

Noting that 20,000 Moskvichs have been sold in Britain, the Association demanded that the government order them off the road. To prove its point, it announced that it would bestow one of its Moskvichs on a government test facility.

For safety purposes, transport to the test center was by trailer.

Well, We're Still Ahead in Wheat Production

Sagging US preeminence in high-technology exports is likely to sag still further as the result of efforts to scalp European nations that have depended on the US for enriched uranium.

Rather than meet the US terms, which call for long-term purchase commitments and pre-payment to meet the cost of expanding US production for the nuclear boom that's foreseen for the 1980s, it now appears certain that five of these nations are going to get together and produce the stuff themselves in a mutually built and operated gaseous diffusion plant.

The plan for a European consortium originated with the French, who, drawing on their own experience with gaseous diffusion for military purposes, proposed a cooperative effort to break the American hold on supplies for most non-Soviet bloc users. The initial response was cool, but when the US came along with its terms, interest quickened, and the French now report that they have lined up Italy, Spain, Sweden and Belgium to back a gaseous diffusion facility with capacity ranging between 5000 and 9000 tons. Production is expected to begin in 1980, and it's reported that Japan, now wholly dependent on US supplies, has indicated a desire to sign up for 2000 tons from the European plant.

Meanwhile, another testimonial to US nuclear foresight is to be found in the progress that an Anglo-German-Dutch consortium is making on construction of centrifuge plants for uranium enrichment. For years, the US AEC insisted that the centrifuge process was too unreliable and costly for industrial purposes, and it advised its European customers to stick to their American suppliers. Centrifuge prototype plants, however are under construction in Britain and in the Netherlands, and each is expected to achieve a 200-ton capacity by 1977. A 2000-ton level is foreseen by 1980, and the figure for 1985 is 10,000 tons.

Viewed against the tattered record of European nuclear cooperation under the auspices of Euratom, the Common Market's feeble nuclear agency, the gaseous diffusion and centrifuge ventures stand out as viable commercial schemes with origins in the marketplace rather than in lofty pronouncements about the virtues of working together. In fact, Britain's Central Electricity Generating Board, announced last month that it plans to sign up for about $60-million worth of production from the centrifuge system, and other orders are confidently expected to follow.

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offered for the thesis that eternal growth, at public expense, is the proper measure of scientific health.

Brooks prescription for more public money is characteristically accompanied by a recommendation that the public be excluded from the decision-making process in scientific matters. ". . . in most fields of science," he states, "the scientific community must develop more effective means of settling its arguments away from the public eye and presenting a more nearly united front to the political process. The cumulative price of repeated appeals to the political process would be high in terms of damage to the integrity of the resource-allocation process for science."

All that need be said about this bit of advice is that fortunately, the scientific community is no longer a disciplined monolith, and like it or not, deliberations concerning resource-allocation will inevitably come to public attention, despite the elder statemen's preference for conducting the public's business in privacy. The fear of light, of course, is so ingrained that the neanderthal leaders of the National Academy of Sciences managed to wrangle an exclusion from the recently adopted Federal Advisory Committee Act, which admits the public to federal advisory proceedings. It is to be hoped that this unjustified exclusion will be wiped out by Congress.

In contrast to early pre-war days, when strategy sessions for opening the federal treasury to academic science usually failed to include the social sciences, the scene today is such that it looks unseemly to omit the practitioners of those dubious "soft" disciplines. And, so, taking up the case for the social sciences was a veteran of social science administration, Henry W. Riecken, who came on like the hungry physicists of 25 years ago. "Any public policy that serves to increase the amount of social science manpower," he stated, "is a useful one, provided that it also increases the level of quality drawn into the field. A major effort should be made to attract better young people earlier and so, through their addition to the corps of workers, to raise the intellectual level of all the discipline."

Riecken's major contribution to the dimunition of thinking on the social sciences took the form of an expression of exasperation over all this nonsense concerning invasion of privacy and informed consent of subjects who are targeted for social science research. ". . . there seems to be a degree of overzealousness in the popular movement to 'protect the rights of the subject' of experimentation," he observes, though he concedes that "inexperience, overeagerness, and unforeseen consequences" sometimes do create problems. But he goes on to conclude that "Appealing as is the doctrine of 'informed consent,' it is sometimes simply unworkable in practice because the subject cannot be made to understand all of the complexities involved in the research procedure, whereas at other times the explanation of the research seems not to be heard at all or to be quickly forgotten."

When such difficulties intrude, there is, of course, the option of not performing the research, but Riecken does not address himself at all to this simple solution.

In conclusion, this book is warmly recommended, but not for the reasons that its creators and most of its contributors intended.—DSG

British R&D Administration: Lessons for the US

London. As a pioneer developer of institutional arrangements for supporting research—such as the research councils which foreshadowed NSF—Britain has long attracted American attention, and especially so in this era of relatively tight money and political pressure for utilitarian research. A key question, then, is whether, despite differences of scale and political system, they've got anything to teach us that is applicable to the American situation. In general, it seems not much, but this is not because of a lack of meritorious ways of doing things here; rather, it is because these ways simply would not transplant well on American administrative soil. Nevertheless, for purposes of emulation and avoidance, there are certain elements of the British R&D scene that merit notice.

Being smaller and poorer while research becomes bigger and more expensive, the British have an edge on the US in experience with the sort of international collaboration toward which we are tending for cost-sharing purposes. The most prominent and successful example, of course, is the multi-national European Center for Nuclear Research (CERN), which is an exquisite model of international cooperation; and the most prominent and disasterous is the Anglo-French Concorde SST project, a politically motivated technical triumph and commercial fiasco which has survived for nearly a decade on the argument that having come so far, they can't turn back.

As far as scientific research is concerned, some of the principles for successful collaboration were outlined in a lecture last spring by Brian Flowers, who recently completed a six-year term as Chairman of the Science Research Council, which is equivalent to our NSF. Addressing himself to the experience of Anglo-German collaboration, Flowers cited six principles as necessary for success:

- First, scientific collaboration should be based on sound scientific projects that will attract the services of topflight researchers; in other words, projects that are cooked up simply to satisfy political desires for joint ventures will lead to neither good science nor good politics.
- Second, goals must be clear, which was not the case, Flowers observed, when Europe got together to create an atomic energy agency, Euratom, but failed to specify just what it was that Euratom was intended to accomplish.
- Third, common problems are not necessarily a justification for common efforts; it must be clear that collaboration will be better than individual national efforts.
- Fourth, once collaboration has been agreed upon, the participants must give it priority over their own national programs in that field; and these national programs must support, rather than compete with, the common effort.
- Fifth, participants must not insist on a rigid policy of financial contributions coming back in the form of contracts for their own industries.
- Sixth, flexibility should prevail in determining which national agency should represent a country in administering international collaboration.

The Flowers' formula is the antithesis of collaboration for the sake of collaboration, and, as such, runs counter to the well-established American political practice of using the brotherhood of science as a means of establishing cordiality in strained relationships. When used for this purpose, as it was during the Cold War, the potential political benefits were such that goodwill was a sufficient return on the investment of money and manpower. But assuming that the Middle East situation does not restore the chill, it would appear that collaborative efforts should now be based on more mature considerations, and for this purpose, the English experience, as reflected in Flowers' prescription, offers some sound guidelines.

Britain is also the site of a rather well-publicized effort to deal with a problem that afflicts virtually all industrially well-developed nations, namely, what to do with big government laboratories that have survived beyond the objectives for which they were created. In this case, the lab is the UK Atomic Energy Authority's Harwell establishment, which is roughly a scaled-down version of our Oak Ridge National Laboratory. The solution that was decided upon here was to reduce the staff by attrition, from 1350 professionals in 1965 to about 980 at present, and to seek income in the commercial marketplace by performing contract research for industry. Since contract research labs have never flourished here, there were few outcries about unfair competition and Harwell now derives annually about $7 million of its $40 million for R&D expenditures from the sale of services to industry.

The example is an enchanting one for the mana-

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OTA Funding Approved, At Last

The much-delayed congressional Office of Technology Assessment (OTA) finally got its initial money last month when Congress approved, and the President signed, a legislative appropriations bill containing $2 million in start-up funds.

That sum, which will finance activities for the remaining eight months of the fiscal year, is less than the almost $4 million which OTA proponents in the Senate sought for the full fiscal year, but it is nevertheless considered ample to get the organization moving.

The legislation also authorized a salary of about $40,000 for the OTA executive director, instead of the $36,000 maximum stipulated for most congressional staff salaries. Former Congressman Emilio Q. Daddario, who championed OTA, is considered a shoo-in to get the appointment.

Academy Withdraws Its Threat to Soviets

The National Academy of Sciences has drawn back from its confrontation with the Soviet Academy, apparently in the belief that Soviet scientists are less hostile toward dissident physicist Andrei Sakharov than events suggested.

In September, the Academy sent two cables to M. V. Keldysh, president of the Soviet Academy, warning that further harassment of Sakharov would jeopardize American willingness to cooperate in joint scientific ventures with the Soviets (SGR, Vol. III, No. 16). The cables particularly lamented that 40 Soviet academicians (of whom Keldysh was one) had publicly censured Sakharov for allegedly undermining peaceful coexistence and maligning the Soviet system. Among other sins, Sakharov had suggested that the West should not move toward detente unless the Soviets liberalized their society.

Keldysh responded to the cables on Oct. 15 in a communication which strongly objected to the content and tone of the American warning. Keldysh contended that Sakharov "enjoys intellectual freedom" and "has every opportunity to actively conduct research . . . We believe that the noisy campaign in the West around Sakharov is advantageous only to the forces which would like to bring the world back to the ill-famed days of the 'Cold War.'" Keldysh also stressed that international relations require that "non-interference in the internal affairs of one another . . . be strictly observed." Attempts to use scientific exchange programs as a political weapon "are absolutely unpromising," he warned.

Although that message has been interpreted by some analysts as a rebuke, the NAS replied on Oct. 23 with a cable thanking Keldysh for his "thoughtful reply" and suggesting that the two academies develop a mechanism for working more closely together. The reason for this abrupt turnaround from the earlier threat to sever relations is that NAS leaders have been informed, through the international scientific grapevine, that the Soviet Academy was under great political pressure to accuse Sakharov of high treason; thus the milder censure which was actually issued can be read, in one sense, as a small victory for Soviet scientists over their political leaders.

Whatever the merits of this analysis, the NAS has apparently concluded it has no real quarrel with the Soviet academicians and nothing more to gain from continued threats, so it is now pushing for cooperation. Meanwhile, Sakharov's future safety remains in doubt.

BRITISH R&D *(Continued from page 6.)*

gers of over-aged government research facilities everywhere, and Harwell abounds with admiring foreign visitors. The situation, however, is of dubious relevance to the American scene, where there is no shortage of contract research capability. Furthermore, a major element in Harwell's success with industry is its ability to promise its clients confidentiality; those who pay for the research get the results exclusively from this government lab, whether or not tax-paying competitors may exist. Except for very special cases, it is doubtful that an American government laboratory could go into the marketplace on this basis without being bludgeoned by Congress.

But perhaps most important of all, the bookkeeping of Harwell is both inscrutable and out of bounds for public disclosure. Harwell charges its customers whatever it wants to charge them, and since the object is to generate income, market value and profit are secondary. In fact, Harwell staff members privately concede that while their costs are high, their prices are usually pretty low. If there is any lesson for the US here, it is that other solutions will have to be found for the survival of our elderly government research facilities.

Finally, there is the matter of deliberate government efforts to invigorate industrial innovation. The UK has a long and not very successful history in this area. There are, of course, so many variables in the complex process of turning an idea into a selling product that it is difficult to assess just what it is that has so often gone wrong. But despite innumerable efforts to bring brainpower together for the purpose of centrally planning and stimulating the industrial coups that seem to spring forth so easily in other nations, the British readily concede a dismal record of technically brilliant ideas sinking in the marketplace. The record ranges from underseas crawlers to hovercraft, from nuclear power (they're now thinking of junking a good portion of past efforts and buying American designs) to Concorde.

With the US now tinkering with various efforts to use federal power to stimulate industrial innovation, the British experience should stand as a warning that the road to success is far from clear.—DSG

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NIE BUDGET *(Continued from page 2.)*

that first year was a modest research grants program totalling some $10 million. For fiscal 1974, the administration proposed a budget of $162.2 million. The House administered a moderate cut, to $142.7 million. But then Magnuson's subcommittee recommended an astonishing reduction to only $50 million. That level was so low that HEW Secretary Caspar Weinberger, no neophyte at fiscal butchery himself, complained: "The disruption and dislocation that this would impose on educational research would all but put NIE out of business."

The full Senate appropriations committee apparently agreed, so it restored $25 million, and the Senate subsequently approved the $75 million figure. At this writing, the HEW appropriations bill is still being haggled over by a House-Senate conference committee. But the conferees have already agreed to accept the Senate figure rather than the higher House figure, and it would take a small miracle to overturn that decision. Even if the budget-busting HEW appropriations bill is eventually vetoed, as seems likely, NIE will still be held to the $75 million figure under the terms of a continuing resolution.

One casualty is almost certain to be the research grants program, which was slated to jump from last year's level of about $10 million to about 10-15 percent of the budget ($14-21 million at the House-approved level of funding). Glennan told SGR that it will be so difficult to compress existing NIE activities within the new budget ceiling that there will probably not be a single penny to devote to research grants. This will not affect current grantees, since they received "forward funding" for their projects under last year's $10 million. But it is unlikely that any new awards will be made this year.

The only hopeful element is that most grant awards are made in the last quarter of the fiscal year; thus if NIE fares better in next year's budget cycle, it might be able to make substantial numbers of awards at the very beginning of the next fiscal year, with the result that there would be only a few months' slippage in actual work performed.

NIE seems to have fallen victim to a number of problems, not all of its own making. The leaders of the new agency were obviously unschooled in the proper care and feeding of Senate grandees, and they obviously did a poor job of presenting their case to Congress (though without a policy-making Council it was difficult to set forth explicit plans).

But much of NIE's trouble stems from the political environment in which it operates. The institute is regarded by many Democrats as a Nixon initiative, and by many Senators as a House initiative, so it has no widespread support in the Senate. Moreover, Congress has been under great pressure from the Nixon administration to curb popular HEW programs, so there was considerable satisfaction in gutting the one part of the HEW budget for which the administration sought a substantial increase. Several senators were also miffed at NIE's unwillingness to fund their favorite pork-barrel research projects.

When the final budget battle came, it turned out that NIE had no strong constituency to support its cause—unlike NIH, for example, which can always muster platoons of Nobel laureates to predict disaster if the health research budget is cut. NIE is too young to have amassed a grateful clientele, and it has a diverse constituency of teachers, administrators, state school officers and researchers with few common ties. The NIE does have enemies in the labor movement, however, notably the American Federation of Teachers, which opposes the voucher experiment which NIE inherited from OEO and which gleefully congratuated Magnuson on his budget-cutting heroics.—PMB

Correction

An item concerning a dispute between an American "think tank" and Britain's Lord Rothschild was erroneously headlined in SGR Vol. III, No. 18. As was clear from the body of the article, the headline reference should have been to the Hudson Institute.

Science & Government Report
Kalorama Station
Box 21123
Section B
Washington, D.C. 20009

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